

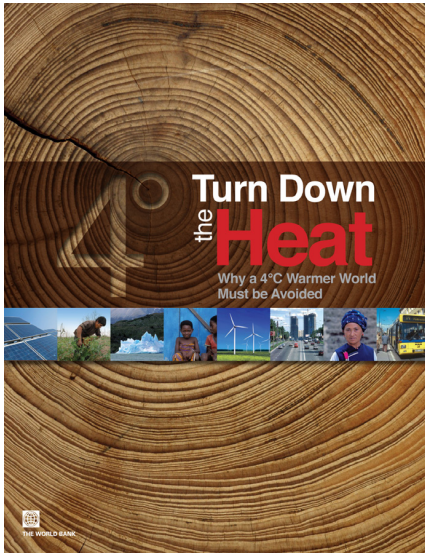


# GreenFacts Highlights

Facts on Health and the Environment

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## Impacts of a 4°C global warming



### → A 4°C WORLD

The current policies that have been put in place to address climate change are likely to lead to an increase in global temperature of 4°C before the end of this century. Even if the international community has committed, through the international agreements of the United Nations Framework Convention on Climate Change to a maximum warming of 2°C, decisive action is still needed to reach this goal. In a report prepared for the World Bank, the Potsdam Institute for Climate Change lays out the consequences of a warming of 4°C.

A global mean temperature change of 4°C is close to the difference between the temperatures of the present day and those of the last ice age, when much of central Europe and the northern United States were covered with kilometers of ice, and the current change—human induced—is occurring at a much faster rate, over a century, not millennia.

If the currently planned actions are not fully implemented, a warming of 4°C could occur as early as the 2060s. Such a warming level by 2100 would not be the end point: a further warming to levels over 6°C would likely occur over the following centuries.

### → FLOODS, DROUGHTS, AND EXTREME WEATHER

The science is unequivocal that humans are the cause of global warming and unequivocal effects of greenhouse gas emissions already observed have continued to intensify, more or less unabated over the last decades. A world in which warming reaches 4°C above preindustrial levels, would be one of unprecedented heat waves, severe drought, and major floods in many regions, with serious impacts on human systems, ecosystems, and associated services.

More specifically, this level of warming could bring:

- the inundation of coastal cities;
- increasing risks for food production potentially leading to higher malnutrition rates; many dry regions becoming dryer, wet regions wetter;
- unprecedented heat waves in many regions, especially in the tropics;
- substantially exacerbated water scarcity in many regions;
- increased frequency of high-intensity tropical cyclones;
- irreversible loss of biodiversity, including coral reef systems.

### → AVOIDING A 4°C WORLD, A MATTER OF COMMITMENT

Numerous studies show that there are technically and economically feasible

emissions pathways that can limit the warming to 2°C, the target that international governments has set in the Cancun Agreement in 2010. Since the currently planned policies would likely result in the 4°C world, the level of impact that the world will experience will be a result of the decisions and choices about climate change that governments, the private sector, and civil society will take. Unfortunately, this also has to include the possibility of inaction.

Large-scale and disruptive changes in the Earth system are generally not included in modeling exercises, and rarely in impact assessments. One example of such a change would be the collapse of the West Antarctic Ice Sheet, which would lead to much larger sea level rise than projected in the present analysis.

A 4°C world is so different from the current one that it comes with high uncertainty and new risks that threaten our ability to anticipate and plan for future adaptation needs. The World Bank is well aware of the uncertainties that surround these scenarios and that different scholars and studies sometimes disagree on the degree of risk. But the fact that such scenarios cannot be discarded is sufficient to justify strengthening current climate change policies. That is the main conclusion of the report: the projected 4°C warming simply must not be allowed to occur—the heat must be turned down. Only early, cooperative, international actions can make that happen.

“These are highlights of “Turn Down the Heat ~ why a 4°C warmer world must be avoided. “ A report for the world Bank by the Potsdam institute for Climate impact research and Climate Analytics on the health, social and environmental impact of climate change induced by a global warming of 4°C.

You can find more information about this topic on the GreenFacts website: [www.greenfacts.org/en/impacts-global-warming](http://www.greenfacts.org/en/impacts-global-warming)